

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of:

Helmut MANGOLD et al.

Application No. 10/020,920

Confirmation No. 8866

Filed: December 19, 2001

For: PYROGENIC OXIDES DOPED  
WITH POTASSIUM

Art Unit: 1793

Examiner: N.Y. M. Nguyen

Atty. Docket No.: 39509- 176287

Customer No.

**26694**

U.S. PATENT & TRADEMARK OFFICE

**AMENDED APPEAL BRIEF**

Sir:

This is in response to a Notification of Non-Compliant Appeal Brief dated July 21, 2008.

The initial response due date is August 21, 2008. Pursuant M.P.E.P. 1205.03, a new section

**(4) STATUS OF AMENDMENTS** and a new section **(5) SUMMARY OF THE CLAIMED INVENTION** is enclosed.

Applicant believes no fees are required. The Commissioner is hereby authorized to charge any additional fee or credit overpayments to Deposit Account No. 22-0261 for the purposes of maintaining the pending status of this application.

#### **(4) STATUS OF AMENDMENTS**

After the final Office Action dated August 16, 2007, Appellants filed the Notice of Appeal. No amendments were filed after the final Office Action that is being appealed.

#### **(5) SUMMARY OF THE CLAIMED INVENTION<sup>1</sup>**

There are three independent claims: claims 1, 4 and 10. Claim 1 is directed to spherically shaped potassium doped pyrogenically produced metal or metalloid oxide particles having a breadth of particle size of at least 0.7. See page 2 at lines 14-15. Also see Example 7 (pp.17-18), Table 4 (pp.27 and 28) and Figures 11 to 13). Claims 4 and 10 are directed to two-step methods for the preparation of the product described in claim 1. See page 3 at lines 4-18. The actual steps are the same. The difference between claim 4 is open to the presence of other steps while claim 10 is closed. the is the transition phrase. Claim 4 is Claim 4 ("comprising") requires the performance of at least the enumerated steps. Claim 10 ("consisting of") the performance is limited to the two enumerated steps. These steps are the same.

Claim 1 further characterizes the particles as having 1) uniformly distributed potassium having a concentration from about 0.03 to 20% by weight (see page 1, lines14-15), 2) BET surface between 1 and 1000 m<sup>2</sup>/g (see page 2 at line 3) and 3) a pH of more than 5, when the particles were present in a four percent dispersion (see page 2, line 17).<sup>2</sup>

Claim 4 describes a two step process. The first step is the feeding of an aerosol-gaseous mixture into a flame under conditions suitable for producing pyrogenic oxides by flame oxidation or flame hydrolysis to form the potassium-doped pyrogenic oxide spherical particle

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<sup>1</sup> The instant specification discusses the unexpected nature of the morphological changes in potassium doped pyrogenically produced silica particles first seen at a minimum potassium concentration. The morphological change in particle concentration permits one to achieve the claimed narrow particle size distribution in a two step process without the need of filtration. Such a narrow distribution of particle sizes was not recognized for potassium doped pyrogenically produced silica prior to Appellants' work.

<sup>2</sup> The product is suitable for chemical mechanical polishing (CMP) applications. (See, for example, page 4 of the specification in the paragraph starting at line 17.)

product having a distribution of particle size of at least 0.7. The second step is the direct recovery of the identified pyrogenic-doped oxide particle product directly from the reacted aerosol-gaseous mixture. Claim 4 specifies the use of an aerosol with a concentration of a potassium salt of more than 0.5% by wt. (See, for example, page 3 of the specification at lines 4-18).<sup>3</sup> The process is exemplified in Examples 2-7. See Table 1 for conditions. See Table 2 for the recovered product characteristics. Claim 4 permits the presence of other steps due to its use of "comprising."

Claim 10 describes a process similar to that of claim 4. Support for the process is the same as that set forth for claim 4 above. Claim 10 employs the closed transition phrase "consisting of" in contrast to claim 4 which employs the open transition phrase "comprising". Therefore, claim 10 is limited to the two enumerated steps.

## **CONCLUSION**

For the reasons set forth above and in the Appeal Brief, it is respectfully submitted that claims 1-7 and 9-11 are patentable over CA 2,223,377 taken in view of Vanell (6,423,638) or Hall et al. (US 6,372,648). Accordingly, the Examiner's rejection of these claims should be reversed.

Respectfully submitted,



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<sup>3</sup> The morphology changes and narrow distribution of particles are apparent from Figures 11A -13B (Table 4 and Example 7 (20% potassium dopant)). Figures 8A-10B (Table 3 and Example 1) illustrate the results obtained in the absence of a dopant.